



# ERO•SCAN<sup>®</sup>

Screeners

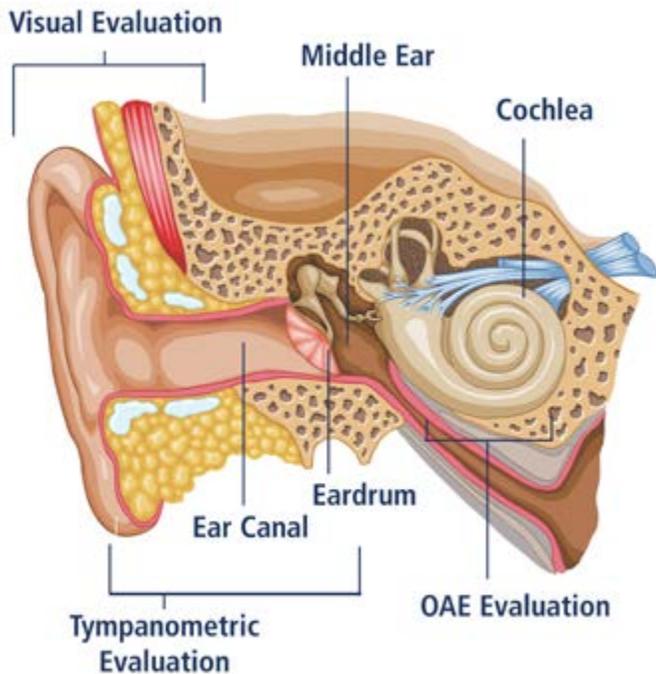
- OAE Hearing Screener
- DPOAE/TEOAE Test Systems

**Ideal for**

- School Nurses
- Birth to 3 Programs
- School and Head Start Programs

## OAE Test System

# Otoacoustics Emissions



## Otoacoustic Emissions (OAEs)

Otoacoustic emissions are sounds that are produced by the cochlea (outer hair cells) and can be measured in the ear canal. When sound passing through the ear canal reaches the cochlea, the vibration stimulates thousands of tiny hair cells. This creates a byproduct that can be detected and measured: otoacoustic emissions.

OAEs only occur in a normal cochlea with normal hearing sensitivity. If there is damage to the outer hair cells, which produces hearing loss, then OAEs will not be present. In general, OAEs will be present if hearing is at 30 dB or better.

This procedure is beneficial in assessing children through a hearing screening program or that cannot be tested by conventional means. For example, pure tone audiometry requires a response from the child which may be an unrealistic expectation and time-consuming.

## Head Start and School Screening

The MAICO EroScan is an effective tool for Head Start and school programs as a means to document hearing testing as well as screen large numbers of children very quickly. Since there is no need for a behavioral response from the patient, it is easy to test ESL and special needs children.



## Database Software

The ERO•SCAN Database Software is a data management tool that compliments the MAICO ERO•SCAN. It provides the ability to transfer patient OAE test data from the device to a PC for the purposes of viewing, archiving, managing and printing OAE reports. Using the database also gives you the means to create letter sized, detailed reports that can be easily filed or faxed. You can also create a "paperless" office by saving the test results as a PDF for electronic filing or email.

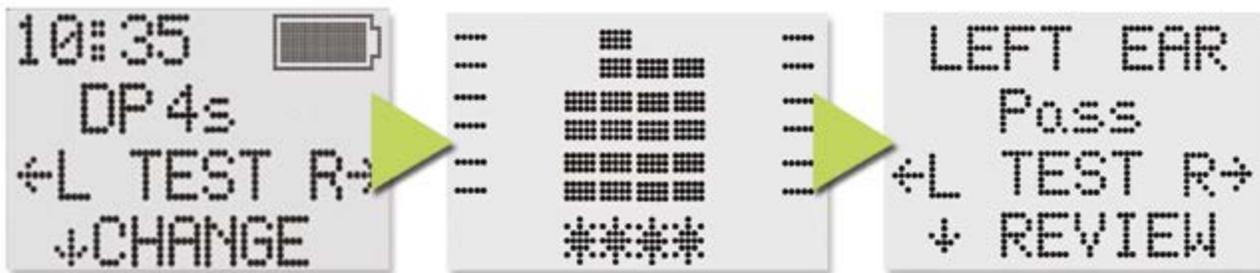


# Screening

## Quick Assessment

ERO•SCAN Screener test system provides a rapid measurement and documentation of Distortion Product Otoacoustic Emissions (DPOAEs) or Transient Evoked Otoacoustic Emissions (TEOAEs) at several frequencies. This device is an ideal screening tool for professionals involved in a hearing screening program or needing a quick assessment of the cochlear system due to the "Pass" or "Refer" outcomes provided. This device is used for all age groups but an ideal solution for those pre-school and kindergarten children and even newborn infants.

- Qualified protocols built into the device
- 4 DPOAE test frequencies reported



## Ero•Scan Benefits

### Results are displayed as Pass or Refer

No need for interpretation. The equipment is automated and will provide easy to read and easy to interpret results. Training is quick and extremely intuitive!

### Test is completely objective

No response from the patient is necessary.  
Easily test uncooperative or non-English speaking patients.

### Accurate results

The patented ERO•SCAN noise algorithm allows for reliable testing in up to 70 dB of background noise, which means fewer false refer results.

### Test both ears in less than a minute

Testing takes less than 30 seconds per ear.

### Memory

The ERO•SCAN contains memory to store 250 tests.

### Portability

The ERO•SCAN hand-held unit is rechargeable with a minimum of 1000 tests between charges and allows you to move from room to room. The remote probe makes it easy to maneuver around the head of your patient to attain a tight ear seal.

### Managing data

Printing reports and tracking data is easy with the database software.

**ERO•SCAN**<sup>®</sup>  
Screener



# Protocols

## DPOAE Protocols

	Name	# of Freq.	F2 Freq. [kHz]	L1/L2	Averaging Time	Pass SNR	# Passing Freq. for Test Pass
Screening	DP 4s	4	2, 3, 4, 5	65/55	4 sec	6 dB	3
	DP 2s	4	2, 3, 4, 5	65/55	2 sec	6 dB	3

## TEOAE Protocols

	Name	# of Freq. Bands	Freq. center bands [kHz]	Averaging Time (max)	Pass SNR	# Passing Freq. for Test Pass
Screening	TE 64s	6	1.5, 2, 2.5, 3, 3.5, 4	64	4 dB	3
	TE 32s	6	1.5, 2, 2.5, 3, 3.5, 4	32	4 dB	3

## Specifications

### Measurement Type:

Distortion Product Otoacoustic Emissions (DPOAE)  
Transient Evoked Otoacoustic Emissions (TEOAE)

### Frequency Range:

Screener version: DPOAE: 2.0 kHz to 5.0 kHz  
TEOAE: 1.5 kHz to 4.0 kHz

### Stimulus Intensity Range:

DPOAE: 40 dB SPL to 70 dB SPL  
TEOAE: 83 dB SPL peak equivalent ( $\pm 3$  dB)

### Microphone System Noise:

-20 dB SPL @ 2 kHz (1 Hz bandwidth) /  
-13 dB SPL @ 1 kHz (1 Hz bandwidth)

### Dimensions:

Dimensions: 2.58" W x 1.23" D x 5.78" H  
Weight: 6.4 oz. (180 gm)  
Probe: 40" L (1.0 meter) Weight 1oz. (28gm)



## MAICO Diagnostics

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### Power Supply:

Lithium-Ion rechargeable

### Battery Life:

1000 tests per charge, minimum  
20 hours on-time

### User Interface:

Liquid-Crystal Display to provide user information and progress of measurement  
4-button keypad to control instrument functions

### Connectors / Communications:

Integrated USB communication capability for battery charging and communication with PC-based database programs  
HDMI connector for connection to the Micro-Probe  
Integrated Bluetooth class 2 + EDR with SPP Protocol for communication with optional printer

### Supported Operating Systems:

- Microsoft Windows® 7
- Microsoft Windows® Vista
- Microsoft Windows® 8

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